I claim:

1. A method for determining the rate of the first arm of reverse cholesterol transport in a living system, said method comprising:

a) administering one or more isotopically labeled high density lipoprotein (HDL) particles, isotopically labeled cholesterol molecules, or isotopically labeled cholesterol precursors to the living system;

b) obtaining one or more isotopically labeled cholesterol molecules from plasma HDL in the living system;

c) measuring isotopic content, isotopic pattern, rate of change of isotopic content, or isotopic pattern of the isotopically labeled cholesterol molecules;

d) calculating the rate of dilution of the isotopically labeled cholesterol molecules by endogenous unlabeled cholesterol to determine the rate of the first arm of reverse cholesterol transport in the living system.

2. The method of determining the rate of the second arm of reverse cholesterol transport, said method comprising:

a) determining the rate of the first arm of reverse cholesterol transport according to claim 1;

b) administering one or more isotopically labeled bile acids to the living system, wherein

i) the isotopically labeled bile acid is administered in a different manner than the labeling pattern of said one or more isotopically labeled high density lipoprotein (HDL) particles, isotopically labeled cholesterol molecules, or isotopically labeled cholesterol precursors, or

ii) the isotope label of said isotopically labeled bile acids is different than the isotope label of said one or more isotopically labeled high density lipoprotein (HDL) particles, isotopically labeled cholesterol molecules, or isotopically labeled cholesterol precursors;

c) obtaining one or more bile acids from the living system;

d) measuring isotopic content, isotopic pattern, rate of change of isotopic content, or isotopic pattern of the one or more bile acids;

e) calculating the molecular flux rate of converting the cholesterol in plasma HDL to bile acid to determine the rate of second arm of reverse cholesterol transport in the living system.

3. The method of claim 2, wherein labeled bile acids are selected from the group consisting of cholic acid, chenodeoxycholic acid, deoxycholic acid, and lithocholic acid.

4. The method of claim 3, wherein the bile acid is cholic acid.

5. The method of claim 2, wherein the isotope label of the one or more isotopically labeled bile acids is ^{2}H, ^{3}H, ^{13}C, ^{14}C, or ^{18}O.

6. The method of claim 5, wherein the isotope label is ^{2}H.

7. The method of claim 1, wherein one or more isotopically labeled HDL particles are administered to the living system.

8. The method of claim 7, wherein the one or more isotopically labeled HDL particles are formed *ex vivo*.

9. The method of claim 1, wherein the one or more isotopically labeled HDL particles are administered by intravascular infusion.

10. The method of claim 1, wherein the living system is a human.

11. The method of claim 1, wherein the living system is a rodent.

12. The method of claim 1, wherein the isotopically labeled cholesterol molecules are cholesterol esters.

13. The method of claim 1, wherein the plasma HDL is obtained from a biological sample selected from the group consisting of blood, urine, feces, and a combination thereof.

14. The method of claim 1, wherein the isotopic content, isotopic pattern, rate of change of isotopic content, or isotopic pattern of the cholesterol molecules is determined by a method selected from the group consisting of mass spectroscopy, NMR spectroscopy, and liquid scintillation counting.

15. A method of assessing the effect of a drug agent on atherosclerosis in a living system, the method comprising

a) determining the rate of the first arm of reverse cholesterol transport in the living system according to the method of claim 1;

b) administering said drug agent to said living system,

c) determining the rate of the first arm of reverse cholesterol transport in the living system according to the method of claim 1 after said administering step b), wherein a difference in the rate of the first arm of reverse cholesterol transport before and after administration of said drug agent to the living system identifies an effect of the drug agent on atherosclerosis.

16. The method of claim 15, wherein the drug agent is a known pharmaceutical agent.

17. The method of claim 15, wherein the drug agent is a deoxyribonucleotide molecule.

18. A method of assessing the effect of dietary modification on atherosclerosis in a living system, said method comprising:

a) determining the rate of the first arm of reverse cholesterol transport in the living system according to the method of claim 1;

b) subjecting said living system to a dietary modification,

c) determining the rate of the first arm of reverse cholesterol transport in the living system according to the method of claim 1 after said administering step b), wherein a difference in the rate of the first arm of reverse cholesterol transport before and after administration of said drug agent identifies an effect on atherosclerosis in said living system.

19. A kit for determining the rate of reverse cholesterol transport in a living system, comprising:

a) one or more isotopically labeled HDL particles, isotopically labeled cholesterol molecules, isotopically labeled cholesterol precursors, or isotopically labeled bile acids; and

b) instructions for use of the kit,

wherein the kit is used to determine the rate of the first arm of reverse cholesterol transport, the rate of the second arm of reverse cholesterol transport, or the rates of the first and second arms of reverse cholesterol transport.

20. The kit of claim 19, further comprising a tool for administering the isotopically labeled HDL particles or labeled bile acids.

21. The kit of claim 19, further comprising an instrument for collecting a biological sample from the living system.

22. An isolated drug agent identified by the method of claim 15.

23. A drug agent identified by the method of claim 18.

24. A method of treating atherosclerosis, comprising administering the drug agent of claim 15 to a living system.

25. A method of treating atherosclerosis, comprising subjecting a living system to the dietary modification of claim 18.

26. An isolated isotopically labeled cholesterol precursor molecule.